S-E-C-R-E-T

CODIB-D-85
19 May 1961

UNITED STATES INTELLIGENCE BOARD

COMMITTEE ON DOCUMENTATION

Report of the Working Group on Remote Systems Input

Attached report was considered by the members present at the CODIB Retreat during a Special Meeting called on 17 May (see CODIB-M-31). The Chairman asked those present to staff out the report within their organizations and to be prepared to discuss the recommendations in para. 5 while CODIB is together on the Boston trip; he specifically asked that each member be prepared to suggest the department or agency best qualified to act on behalf of the Community to develop the required device.

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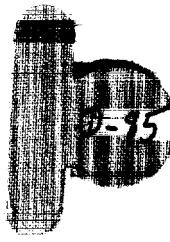
Secretary

Attachment



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12 May 1961

MEMORANDUM FOR: Chairman, USIB Committee on Documentation

SUBJECT: Report by Working Group on Remote Systems Input

1. As instructed by the full Committee on Documentation, the Working Group on Remote Systems Input has considered the community's need for a typewriter which may be used in overseas installations to create a machine language byproduct for use in both communications and data processing equipment.

2. At its meeting of 11 May 1961, the Working Group took its final action on a requirements statement for such a device. This statement is contained in Attachment 1.

3. At the same meeting the Working Group was briefed by technical personnel of NSA and CIA on the general scope of the security problem revealed by recent investigation. Some hope remains that redesign of equipment such as the Flexowriter, a suitable physical security environment, or other countermeasures may yet be devised to permit the use of presently available equipment. Work in this area needs to be intensified. On the other hand, the advance in intercept technology, and the consequent complexity and growing costs of countermeasures, suggest that a more basic long-term solution not now in sight needs to be sought.

4. It is clear to the members of the Working Group that the Government needs to procure for use in installations which may be physically vulnerable to technical attack a machine-language producing typewriter in which the hazards resulting from the discharge of compromising emanations are minimized. The Working Group believes that it will be necessary to contract with industry for a research and development effort to eliminate, or to reduce to the greatest possible extent, the causes of these emanations at the source. This more fundamental approach holds greater promise of solving the input typewriter problem than the present course of limiting ourselves to applying remedies to commercially available machines with all their built-in emitters.

5. The Working Group therefore requests the Committee on Documentation to act in the following manner:

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a. Ascertain which authority in the Government is best able to act in the interest of the intelligence community as a whole.

b. Request this authority to appoint one member of the intelligence community as the contractor to negotiate with industry for development work along the lines of Attachment 2 for a secure device which meets the requirements specified in Attachment 1 as closely as possible.

c. Request that appropriate research and development funds be made available for the work involved.

d. Urge those concerned to commence work as soon as specifications in line with Attachment 2 can be developed in adequate depth.

e. Request the contracting agency to keep the members of the Committee advised on progress at frequent intervals.

f. Seek a commitment from all members of the intelligence community to the effect that once a device has become available which comes as close as possible to the specifications in Attachments 1 and 2, no other input typewriters will be used for the typing of classified information at diplomatic or other jointly used installations abroad.

6. It is the sense of the Working Group that this is an urgent task. No time should be lost in identifying the action agency and the source of funds. We consider delays in this area hazardous because the pressure for the use of equipment such as Flexowriters is bound to increase rapidly in the light of advances in the communications and data processing fields. Member agencies will thus find themselves in the increasingly unpleasant dilemma of having to forego the manpower, speed, volume processing, and quality advantages of modern equipment, or of accepting greater security risks.

[redacted]

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Chairman of Working Group

Attachments:
1. USIB Equipment Requirements for Remote Systems Input Device
2. General Security Specifications for Equipment Development

Attachment 1

USIB EQUIPMENT REQUIREMENTS FOR REMOTE SYSTEMS INPUT DEVICE

1. This is a statement of USIB requirements for an input device to be used in typing classified information at diplomatic establishments and other jointly used installations abroad. The statement has been formulated by the USIB/CODIB Working Group on Remote Systems Input. The requirements listed include those common to all participating agencies, as well as those of major significance to one or more agencies. They will be the basis for developing agreed engineering specifications for a common use machine which will be operable by 1965.

2. Objectives:

a. To produce reports in a machine processable language and medium as a byproduct of the original typing by the reporting activity.

b. To transmit this information to the processing centers concerned for further dissemination, the mode of communication depending on the urgency of the information contained in the report.

c. To put the reports into EDP systems with a minimum of human intervention.

d. To use the same equipment to prepare information for transmission to the reporting activities.

3. Requirements for Input/Output Typewriter:

a. The typewriter should be able to produce a machine processable language on a medium such as paper or magnetic tape as a byproduct of typing, and should be able to automatically type when reading this byproduct at a speed of 120 words per minute or faster.

b. Standard four-bank keyboard with upper and lower case letters, digits, and those typing and programing functions, and special characters, which are determined during the preparation of engineering specifications to be needed by each agency. See example of keyboard layout attached.

c. Provision for programing; that is, the capability for automatically controlling the functioning of the typewriter, including the automatic typing of repetitive and control data, to insure formating of records to be processed into an EDP system. The typewriter should be designed to require the minimum exercise of operator judgment.

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d. Equipment easy for average typist to use, including provision for a simple and easy method for correcting the machine language byproduct of typing.

e. Safeguards against interception of information.

f. Safeguards against accidental or deliberate erasure of reports in transit, if magnetic storage is involved.

4. Coding Requirements:

A coding structure is required which can carry the full range of information typed through both the telecommunications and the data processing systems while retaining the capability for reconstituting the original language, including the distinction between upper and lower case, at the output terminal. This must be accomplished without exceeding the internal limitation of 64 code combinations imposed by the computer systems now planned by member agencies. This includes provision for the direct acceptance of the machine byproduct into then-standard communications equipment. For planning purposes it is assumed that 5-channel communications equipment will still be in general use at diplomatic and other jointly used installations abroad in 1965. Communications coding requirements include:

a. A 5-channel code which does not lengthen teletype message significantly.

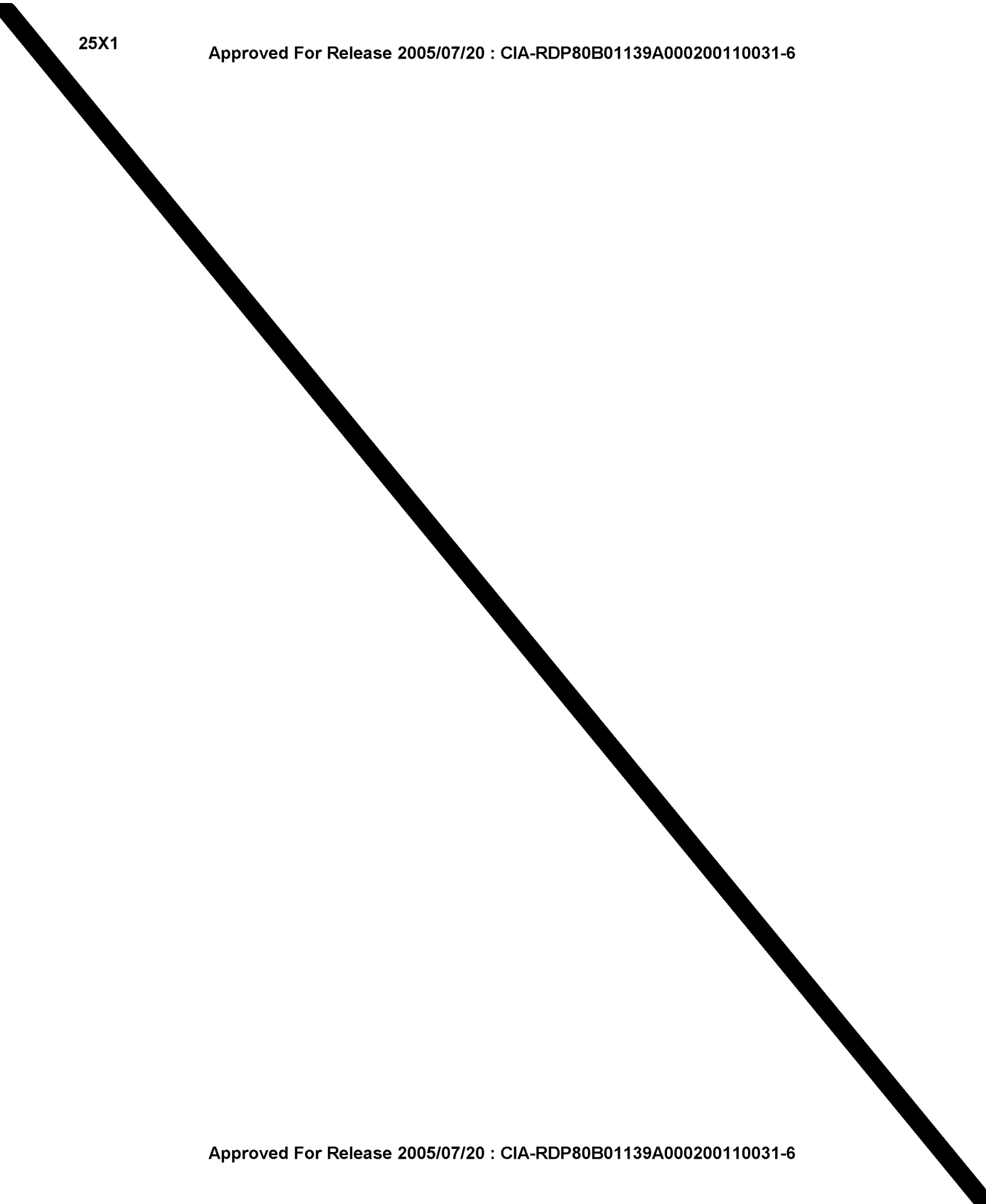
b. A 5-channel code which is sufficiently compatible with the Baudot code to make possible the monitoring of messages during handling by communications personnel.

5. Other Considerations:

Features which should be weighed in evaluating the merits of competing devices include:

a. Office Use - equipment should be quiet, compact and durable.

b. Maintenance - telecommunications wire technicians, or their equivalent in technical skill, should be able to maintain the equipment with a few weeks' special training.



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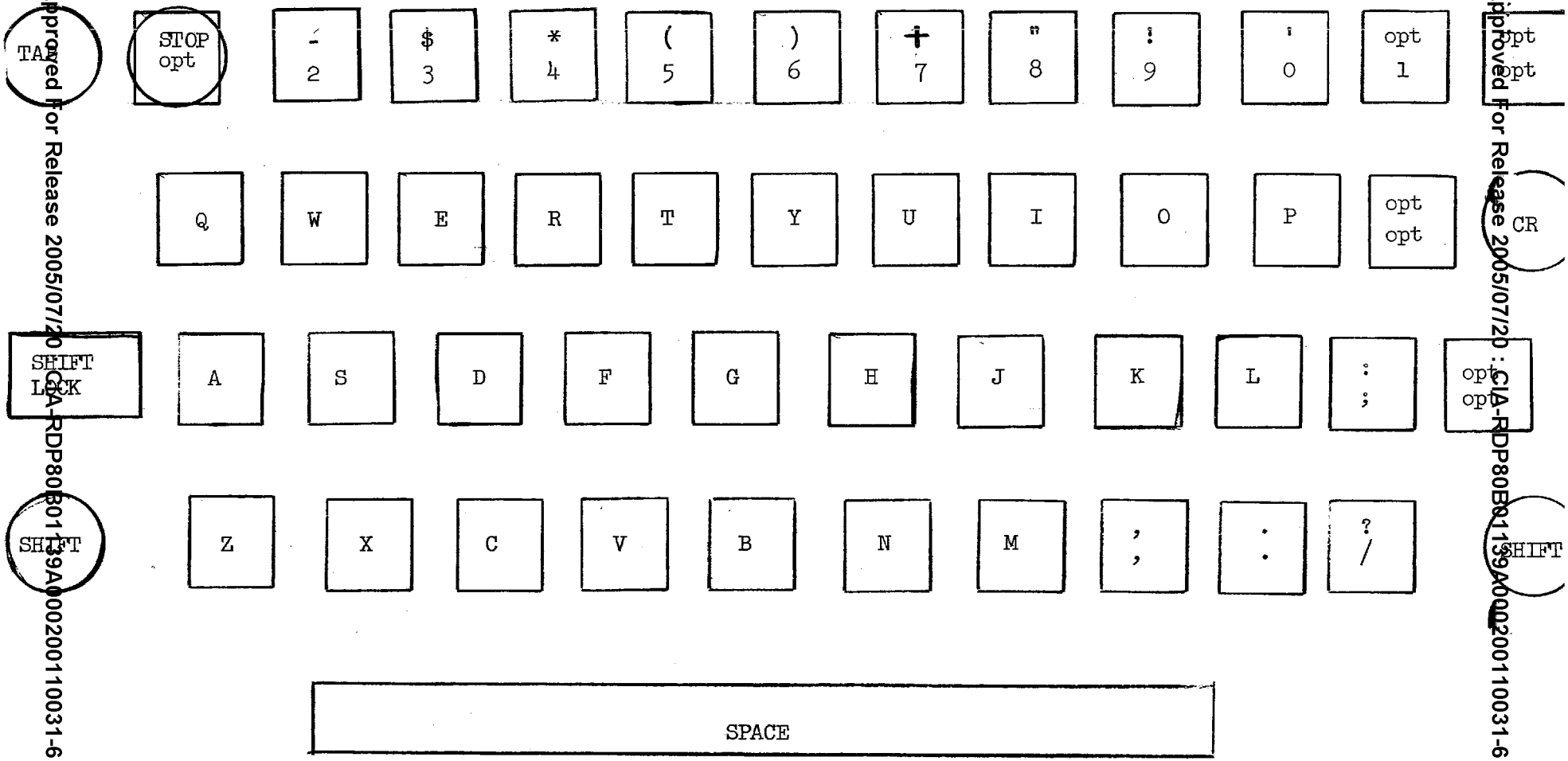
KEYBOARD LAYOUT - 4 BANK, 44 KEYS



1. Special Characters: The 15 shown common to Defense Fieldata and CIA. 8 Optional Characters Available.

2. Functional Codes: TAB, SHIFTS, CR, STOP and SPACE Shown.

3. Coding Combinations: With 64 Code Combinations, 28 Special Characters and Functional Codes Possible.

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